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Usage pattern of Proton pump inhibitor among resident doctors in a tertiary-care hospital of Manipur

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Abstract

Objectives: To determine the prevalence of proton pump inhibitor use among the junior doctors in a tertiary health care centre of Manipur & to assess the practice of proton pump inhibitor use among them.
Materials & Methodology: A cross-sectional study was conducted among the junior doctors i.e. internees, house officers and post graduate students in a tertiary health care centre of Manipur during November to January 2012. Respondents were purposively selected and data were collected using structured interview schedule which consists of socio-demographic variables, questions on use of PPI. Those who refused to participate and who could not be contacted even after 3 successive visits were excluded from the study. Data were analysed using SPSS 20 & was presented in mean, percentages etc.
Results: Prevalence of PPI use was 66.6%. All the doctors used PPI only on selective patients. Majority of them use for gastrointestinal diseases (84%). Little more than 9 in 10 participants used PPI for the patients aged 20-30 years. Majority of them used PPI for 2-4 wks in Acid Peptic Disorder (30.5%) and less than 1week in Non Acid Peptic Disorder. More than 8 in 10 participants told that PPI was the best drug for acid peptic disorder and majority opined that PPI should not be used randomly for all gastro-intestinal disorder.
Conclusion: Inappropriate use of PPI remains rampant in hospital practice. Increased awareness should be created among the clinicians so that appropriate prescription of PPIs could improve the patient care.
Keywords: Prevalence, proton pump inhibitor, Acid Peptic disorder.

1. Introduction

With the advent of proton pump inhibitors (PPI), the treatment of different acid-related gastrointestinal disorders has revolutionized.[1] Proton pump inhibitors (PPIs) are a group of drugs that cause pronounced and long-lasting reduction of gastric acid production. They are the most potent gastric acid suppressing drugs currently in clinical use.[2] PPIs irreversibly inhibit the gastric H+-K+ ATPase pump also known as proton pump and reduce both basal and stimulated gastric output. Currently the PPIs available in India are Omeprazole, Esomeprazole, Pantoprazole, Rabeprazole and Lansoprazole. PPIs are used therapeutically in active ulcers, Zollinger-Ellison syndrome, Gastro Oesophageal Reflux Disease (GERD), GI bleeding, dyspepsia from NSAID's and along with antibiotics for helicobacterpylori.[3] Because of these common medical problems, PPIs are one of the most widely prescribed medications across the globe, and also there is a common belief that PPI have very low levels of toxicity and high levels of efficacy. However, evidence is mounting that these medications can lead to some troublesome and even serious side-effects. In 2000, the National Institute for Health and Clinical Excellence (NICE) published guidelines and recommended the doses and duration of PPI usage in different clinical indications.[1] However, the inappropriate prescription of PPI continues to rise every year, and this also significantly affects the total health

expenditure.[4] The incidence of improper use of PPIs varies from 40-70% in various studies.[5-7] Many drug utilization studies have reported widespread use of PPIs and that are outside the current prescribing guidelines.[8,9] The knowledge on usage pattern of PPI among the junior doctors will be of great value to formulate strategies that will prevent PPI misuse. Being the junior doctors they are the highly vulnerable groups that are likely to overuse drugs. Targeting them with proper clinical guidelines like standard treatment protocol as well as awareness generation will address this issue. To the best of our knowledge, no study regarding the use of proton pump inhibitor has been conducted so far in Manipur. Hence, this study is undertaken to highlight the use of proton pump inhibitor among the junior doctors in a tertiary health care centre of Manipur with the objective to determine the prevalence of proton pump inhibitor use among the junior doctors in a tertiary health care centre of Manipur & to assess the practice of proton pump inhibitor use among them.

2. Materials and methodology

A cross-sectional study was conducted among the junior doctors i.e. internees, house officers and post graduate students in a tertiary health care centre of Manipur during November to January 2012. In this study, respondents were purposively selected and data were collected using structured interview schedule which consists of socio-demographic variables, questions on use of PPI. Those who refused to participate and who could not be contacted even after 3 successive visits were excluded from the study. After obtaining the permission from the respective Head of the departments, doctors and nurses working at RIMS, at the time of their duty, were approached. They were initially informed about the study, and those who consented were given a questionnaire. An appointment for 30 minutes was made with each of the individual respondent to answer questionnaire in my presence and any doubt regarding the topic and questions was clarified. The study was approved by Instiutional Ethics Committee, RIMS, Imphal. Informed consent from the study participants was taken. Confidentiality of the respondents was maintained.

2.1 Statistical Methods

Data so collected were checked for consistency and completeness and fitted in data base software SPSS version 20. Descriptive statistics like percentage was used to describe the findings.

3. Results

Total respondents were 100. Majority of the respondents (66.7%) were post graduate students, 30% were internees & only 13.3% of them were house-officers. 8 in 10 participants follow Hinduism. Almost 6 in 10 participants were more than 30 years of old. Male participants constitute 75% of them where as female participants were 25% **(Table 1)**

Table 1: Socio-demographic characteristics (N=100)

Characteristics	Number	Percentage
Qualification		
Postgraduate students	100	66.7
Internee	30	30.0
House officer	20	13.3
Age		
≤30 yrs	60	40.0
>30 yrs	90	60.0
Gender		
Male	113	75.3
Female	37	24.7

Prevalence of PPI use was 66.6%. All the doctors used PPI only on selective patients. Majority of them use for gastrointestinal diseases (84%). Little more than 9 in 10 participants used PPI for the patients aged 20-30 years. More than 8 in 10 participants used PPI for selective Gastro-Intestinal disorder and 87.8% of them used for Acid-Peptic disorder.76.6% of the respondent used Pantoprazole followed by Rabeprazole (16%), only 1.3% of them used Ranitidine. 82% of the respondents used PPI for selective GI disorder & among them 8 in 10 participants used this for Acid peptic disorder. Only 12.2% of them used PPI for non Acid Peptic disorder. Majority of the participants used PPI for 2-4 wks in Acid Peptic Disorder (30.5%) and less than 1week in Non Acid Peptic Disorder (60%). More than 9 in 10 participants used PPI either in ward or OPD. More than 7 in 10 respondents were using oral form of PPI and 23.3% of them used injectable forms. Majority of them i.e. 94% of them used to prescribe once daily dosage. More than 7 in 10 participants co-administered other medicine and among them antacid was the commonest (62.5%). Only 3% of the patients got side effects and among them 13.3% complained of constipation. More than 8 in 10 participants told that PPI was the best drug for acid peptic disorder and majority opined that PPI should not be used randomly for all gastro-intestinal disorder. **(Table 2)**

Table 2: Use of Proton Pump Inhibitor (N=100)

Questions	Number	Percentage
Proton pump inhibitor use		
All patients	0	0.0
Selective patients	100	100.0
Use of PPI in different systemic disease*		
Cardiac	21	21.0
Neurological	60	60.0
Gastrointestinal	84	84.0
Pulmonary	3	3.0
Dermatology	3	3.0
Urology	5	5.0
Psychiatry	3	3.0
ENT	11	11.0
Obs and Gynae	7	7.0
Orthopedics	9	9.0
Anesthesiology	2	2.0
PPI use in different age group*		
<10yrs	16	10.7
10-20yrs	60	40.0
20-30yrs	137	91.3
30 and above	124	82.7
Types of PPI used		
Pantoprazole	115	76.6
Rabeprazole	24	16.0
Omeprazole	4	2.6
Lansoprazole	5	3.3
Ranitidine	2	1.3
Use of PPI in GI disorders		
All GI disorder	27	18.0
Selective GI disorder	123	82.0
If selective, use of ppi in Acid peptic disorder/ Non acid peptic disorder		
Acid Peptic disorder	108	87.8
Non acid peptic disorder	15	12.2
Duration of prescription of PPI in Acid peptic disorder		
<1wk	27	25.0
1-2 wk	32	29.6
2-4wk	33	30.5
1-6mnths	14	12.9
>6mnths	2	1.9
Duration of PPI in Non Acid peptic disorder		
<1wk	9	60.0
1-2 wk	3	20.0
2-4wk	2	13.3
1-6mnths	1	6.7
>6mnths	0	0.0
Place of PPI use*		
OPD	148	98.6
Casualty	136	90.6
Ward	148	98.6
Forms of PPI use		
Injectable	35	23.3
Oral	115	76.7
Table 2 continue.....		
Dosage of prescribing PPI		
Once daily	141	94.0
Twice daily	9	6.0
In acid peptic disorder do you use any other acid suppressing drugs		
Yes	80	74.0
No	28	36.0
If yes, type of acid suppressing drug used		
H2 blocker	2	2.5
Antacid	50	62.5
Ulceroprotective	28	35.0
Complain from patients taking PPI		
Yes	5	3.3
No	145	96.7
Types of complaints received from patients using PPI		
Nausea, Vomiting	2	13.3
Constipation	2	13.3
Diarrhoea	1	6.6
PPI as a best drug to be used in acid peptic disorders		
Yes	130	86.7
No	20	13.3
Random use of PPI in all gastro-intestinal disorders?		
Yes	65	43.3
No	85	56.7

***Multiple answers allowed**

4. Discussion

There is a growing unease over the rapid increase in antisecretory drug prescriptions, mainly PPIs, both in hospital and general practice and the rising costs associated with this trend.[10] In our study, prevalence of PPI use was 66.6% and this percentage is even more than what has been published by other authors (30.40%).[11-14] But the findings are in accordance with the previous study by Ramirez *et al*[15], who reported that the use of PPIs range from 28.65 % to 82.65% and Sandozi T[5] who reported use in 45 % of hospitalized patients. In this present study, 84% of the respondents used PPI for gastrointestinal disorder and majority of them prescribed it for Acid peptic disorder which is in contrast with other authors where they described the indication of prescribing PPI was the co-administration with NSAIDS.[4] Little more than 9 in 10 participants used PPI for patients of age group 20-30 yrs which is similar with Nousheen *et al*[16]. In the present study, 76% of them prescribed Pantoprazole which is similar with others where the most common proton pump inhibitor used was Pantoprazole in 82% of patients, followed by Omeprazole (11%) and Esomeprazole (7%).[4,16] Around 76.6% of the respondents were using oral form of PPI and 23.4% of them used injectable forms which is similar with a study finding where oral therapy with PPIs was prescribed in 70 % of patients and intravenous PPIs in

30% of patients.[16] Majority of them i.e. 94% of them used to prescribe once daily dosage in our study where other authors find similar findings where 97% of the doctors prescribed PPIs once daily and only in 3% of the patients, twice daily therapy was administered.[16] More than 7 in 10 participants co-administered other medicines and among them antacid was the commonest (62.5%), but this percentage is higher than Nousheen *et al* where 3% of the respondents were administering antacid concomminantly. We acknowledge that there are few limitations to this study. For example, no history was documented about the usage of non-pharmacologic treatments for acid related GI disorders, and the potential recall bias, given that data were obtained from patient's interview.

Inappropriate use of PPI remains rampant in hospital practice. Increased awareness should be created among the clinicians so that appropriate prescription of PPIs could improve the patient care. More drug utilization and pharmaco-economic studies should be conducted in future to compare the rationality of use of proton pump inhibitors to know the exact scenario and plan the remedial measures.

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